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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,169	09/10/2003	Lin Wang	CL1518 US CNT	3752

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WILMINGTON, DE 19805

EXAMINER

RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/659,169

Applicant(s)

WANG ET AL.

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-35, 37 and 39 is/are rejected.
- 7) ☒ Claim(s) 36 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Prior rejection under 35 USC 112(2) is withdrawn in view of amendment. The amendment has deleted any requirement or implication that an oligomerization catalyst is present, or that the monomers are oligomerized in-situ. The amendment has also added the new requirement that the additional monomers are separately added.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 26, 30-32, 35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Ewen et al. (US 4,937,299).

The reference teaches a method of polymerizing ethylene with higher olefins (including butene, hexene or octene) to form a polymer blend, comprising the use of two different metallocenes and aluminoxane, (col. 3, lines 19-36). Suitable metallocene pairs are disclosed at col. 4-5 and in the working examples, and the components are

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optionally supported and used in the gas phase (col. 6, lines 44-50). The different metallocene structures required in the reference process would inherently have different copolymerization activity because of their different structures. The reference disclosure therefore meets the requirement that the second catalyst does "not readily copolymerize" because applicants' definition of this phrase includes a scope wherein any difference at all in copolymerization activity meets the definition (see specification at page 14, lines 29+).

4. Claims 26 and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Nowlin et al. (US 5,539,076).

The reference teaches a method of polymerizing ethylene with hexene in the gas phase to form a polymer blend, comprising the use of two different supported transition metal catalysts (Examples D and E), including all claimed limitations. The different catalyst structures required in the reference process would inherently have different copolymerization activity because of their different structures. The reference disclosure therefore meets the requirement that the second catalyst does "not readily copolymerize" because applicants' definition of this phrase includes a scope wherein any difference at all in copolymerization activity meets the definition (see specification at page 14, lines 29+).

5. Claims 26 and 28-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Bennett et al. (US 20020077432).

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The reference teaches a method of copolymerizing olefins comprising the use of an early transition metal catalyst and a late transition metal catalyst (title, abstract, (paragraph 0006). Preferred species of the late transition metal is indicated in paragraph 0154, and the early transition catalyst may be a Ziegler or metallocene structure (paragraphs 0011-0150). The reference teaches that one effective use of the process is in the making of a polymer product comprising a mixture of an ethylene homopolymer and an ethylene copolymer, wherein the homopolymer is made with the late transition metal catalyst (paragraph 0205). The catalyst is furthermore optionally supported (paragraphs 0200-0203) and optionally run in the gas phase (paragraph 0206). Accordingly, the reference contains all claimed limitations.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 26 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson et al. (US 6,461,994).

The reference is directed to the use of tridentate ligands of transition metal catalysts, particularly Fe species, as polymerization catalysts (see col. 1-2, examples). Working example 8 describes the gas phase copolymerization of ethylene and hexene

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using a supported species within the scope of instant claim 29. The only claimed component missing from the example is the addition of a second catalyst. However, the reference suggests the addition of a second supported catalyst, such as a metallocene, ZN or Phillips catalyst component (col. 5, line 61 through col. 6, line 32; patented claim 27). The ordinary skilled chemist would immediately envisage that such use would necessarily result in an in-situ blend, and furthermore that the two catalysts would have a different copolymerization activity as a result of their substantially different structures. Therefore, one of ordinary skill in the art would be motivated to add a second supported catalyst to the exemplified methods because the reference has suggested the addition of a second supported catalyst to the methods described therein.

8. Claims 27 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al. (US 20020077432).

The parent claims are discussed with respect to this reference above. The only element missing from the previously cited disclosure is the specific identification of which monomers should be selected when adding more than one comonomer.

Paragraph 0205 states that the process may comprise "one or more olefinic comonomers such as ethylene or C<sub>3</sub>-C<sub>20</sub> alpha olefins". Therefore, when selecting one or more comonomers, one of ordinary skill in the art would be motivated to select from at least the simplest group, comprising propylene through hexene, which are used to form the vast majority of industrially significant olefin copolymers. Inclusive of this group would be ethylene in combination with propylene and butene, or butene with hexene.

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Reasonable success would be expected because the reference has stated that these types of copolymerizations are within the scope of the disclosed process.

***Allowable Subject Matter***

9. Claims 36 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references cited on this record have not disclosed the making of the required blend wherein the catalysts are both metallocenes and wherein the second metallocene is substantially or totally ineffective for copolymerizing ethylene with alpha olefins.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

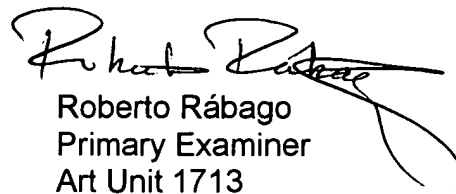
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
January 10, 2005